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"GRAY'S ANATOMY."*

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THE advent of a new work on Anatomy, if it be not a matter of congratulation, at least is one which excites curiosity. It would seem, at first sight, as if a subject which has been pursued with such zeal for so long a period, could hardly admit of being treated in any manner possessing novelty, or embodying new material. Anatomy is, however, a progressive science, though it is not in that part usually called descriptive that this progress is to be sought for. Few men can find, or persuade themselves, and convince others, that they have found, a new muscle, a new ligament, or a new nerve. The ground has been worked over too patiently to admit of profitable gleaning. But in the more profound, though not less practical ranges of study, in the principles of development, in the homological relations of human and comparative anatomy—illustrated as these so often are by teratology—in the revelations of the microscope, and the results of experimental physiology, we may look for and find the progress which makes existing anatomical treatises pass out of date, and creates the call for new ones. Anatomy formerly required nothing from its teacher but exactness in the art of description; it could be taught as well from the manikin of Auzoux as from the dissections of Ludovic Hirschfeld. This is not now the case. A muscle is no longer a cord; synovia is something more than an oil to facilitate friction; a viscus is not simply an apparatus for distillation or fermentation. The definition of true anatomy might almost be given in a literal reading of the ancient medal which represented an empty skull surmounted by a butterfly, and bore the motto, "Life in Death."

In the work before us, elegant in exterior, numbering between seven and eight hundred pages, profusely as well as beautifully illustrated, and with a professional reputation at stake, we na-

* Anatomy, Descriptive and Surgical. By Henry Gray, F.R.S., Lecturer on Anatomy at St. George's Hospital. The Drawings by H. V. Carter, M.D., late Demonstrator at St. George's Hospital. The Dissections jointly by the Author and Dr. Carter. With three hundred and sixty-three Engravings on wood. Philadelphia: Blanchard & Lea. 1859.

turally look for a novelty in method and a freshness in description, which shall come pleasantly and profitably as a change for the familiar sentences of older text books; for a volume which, embodying in its pages the scattered facts and floating fragments of knowledge which find their way into periodical literature, shall accredit every man with what justly belongs to him, and yet appropriate the experience and observations of all.

We regret to say that these expectations are not realized. In his preface, the author observes that the work is "intended to furnish the student and practitioner with an accurate view of the anatomy of the human body." We shall have abundant opportunity, before finishing this article, to show how unsuccessful he has been in the accomplishment of this design. We shall find that his book contains but little which works already familiar to students do not contain, and that it omits much which these very books do contain, whilst it seems to ignore all those relations, which, as we have just remarked, make anatomy a progressive science. As has been well said, a mere list of hills, rivers and boundaries is not scientific geography; nor is a list of bones, muscles and arteries scientific anatomy. We look in vain for the ground on which the author can have planted his hopes of success, and are forced to suspect that in the illustrations is to be found the *coup d'état* on which he relied. These certainly redound to Dr. Carter's credit, more than the text to Mr. Gray's. Their originality and brilliancy, the novelty of their size and number, can hardly fail to captivate the student, and they deserve the highest tribute of praise for their general accuracy, and correct drawing. If we do see occasionally one of very inferior character, such as No. 275, 328, 329 and 342, or the copying of a blunder, as in No. 362, where the iliac fascia is represented as splitting to permit the passage between its two layers of the iliac vessels, we cannot fail to overlook them in the unusual merit which they unquestionably possess as a whole.

We have our own ideas, however, as to the desirableness of general illustration, and they have only been confirmed since Mr. Gray's book first made its appearance in America. Certain points can perhaps be learned more easily by the aid of a diagram or illustration; but let a student have general illustrations, and just so surely will he use them at the expense of the text; the disposition is irresistible, and the teacher even will find himself verifying a fact by a plate instead of the text. When this use is so much facilitated and encouraged by the plan of lettering each part, the illustrations are, we believe, really objectionable; few, if any students have the self-denial or decision necessary to use and not abuse them. That these ideas are not peculiar, but shared by others, is shown by the *Dublin Dissector* of the late Mr. Harrison, and *Ellis's Demonstrations*, two of the most successful anatomical books ever published, both of which have gone through several editions, and neither of them has a single illustration.

We should be glad if we had no graver fault to find than that Mr. Gray's work is illustrated. Though not prepared to use the rude expressions of the London Medical Times and Gazette, and say that it is "low and unscientific in tone," we do consider it superficial and incomplete, and too often careless and erroneous.

In the first place, we must complain of the frequent omission of, and constant meagreness in, its details of microscopical anatomy, though the introduction of these is made one of the boasts of the preface. We find not a word as to the minute structure of the elementary tissues, of bone, of the nerves, or of cartilage; with all the luxury of illustration characterizing the book, there are hardly a half dozen microscopic drawings. The same complaint may be made with regard to the history of development, of which such a display is made in the subject of osteology; the student seeks in vain to learn what the Wolffian bodies are, and is not even taught the difference between the fœtal and adult liver. The equally important process of resorption is entirely ignored.

The subject of homology receives no recognition, and yet the homologies have become one of the most important and instructive departments of anatomical study. What can be more interesting than the fossa, pointed out so plainly by Dr. Holmes, which marks the insertion of the masseter muscle into the inferior maxilla, when looked at in the light of comparative anatomy, and contrasted, for example, with the same fossa in the lower jaw of a tiger; what more satisfactory than the homology of the supra-condyloid process of the humerus, so admirably elucidated by John Struthers; or, from either a general point of view, or in tracing the analogy between the two extremities, of the "supra-condyloid process" sometimes thrown out by the femur at the point of the insertion of the short head of the biceps, first described by Barkow and Dr. Wilbrand, which has hardly yet arrested general attention, but which corresponds so precisely with a normal process on the femur of the horse. The Warren Museum contains two specimens of this process, and we have, within a few days, compared them with the femur of "Old Black Hawk," at the museum in the State House, and are surprised at the accurate analogy between the normal and the occasional process. In our author's brief allusion to the homology of the patella we have, moreover, the perpetuation of what we believe to be an error, in the statement that its homologue is the olecranon. Mr. Owen ("*On the nature of limbs*," pp. 19 and 24) states that "in certain bats there is a development of a sesamoid bone in the biceps brachii, which is the true homotype of the patella in the leg," and that an extension of the styloid process of the fibula above the knee, which is met with in the Ornithorynchus, Echidna and some other animals, is the homologue of the olecranon. A statement like this, from an authority like Mr. Owen, ought not to be overlooked, even if it is not adopted. In

this connection it may be remarked, as a matter of regret, that, at this present day, it is not a settled question of how many bones the human skeleton consists; Mr. Gray makes them 206, whilst Mr. Humphry counts 220, Quain and Sharpey 197, and Wilson 246.

We find no allusion to that lamellated structure of bone, visible to the naked eye in an ordinary section, but which is made more so, after the immersion of the bone in acid, when the successive layers may be separated and peeled off. This arrangement, common to calculi, phlebolites, coagula, &c., must depend upon an intermission in the deposition of particles which would seem to imply a periodicity of activity in the processes of nutrition. It at once becomes interesting, therefore, as suggesting the question whether a similar "rhythmic nutrition" goes on in the softer tissues, the impressions of which cannot be traced, and institutes the inquiry as to what relation these processes have with the chronometrical ones which we see in plants, as well as in animals, in health and in disease, in the physiological functions, and even in the duration of life itself. The development of this idea has recently been the subject of an interesting and learned lecture by Mr. Paget, in which he expresses the belief that "the observance of time in organic processes is exact and universal; each species has a time-rate for the processes of life, variable, but not determined by external conditions; the several phenomena, commonly studied as the periodicities of human life, are only prominent instances of a law that is general and universal."

At p. 115, we read of the structure of the femur, "like that of other cylindrical bones, the linea aspera is composed of a very dense, ivory-like, compact tissue." Whilst we learn, for the first time, that all the cylindrical bones have a linea aspera, we do not feel that that statement compensates for the want of other information. It will hardly be believed, without turning to the book, that this sentence contains every word vouchsafed the student as to the structure of the femur. There is not a line as to the arrangement of the cancelli in the neck of this bone, and which has been so carefully studied in this country by Dr. Jeffries Wyman and Dr. H. J. Bigelow. This beautiful illustration of applied mechanics is not ignored by other English writers, for the disposition of its bony plates in a series of arches is too striking not to arrest the most casual observer, and plays such an important office in strengthening a part so liable to fracture, that we can hardly conceive of its omission by the author.

At p. 2, we find the bones divided into the usual classes of long, short and irregular, and the bones belonging to each of these sets are enumerated. We find neither the ribs or the sternum included in either of the categories, and these, perhaps, would be the very bones which the student would be puzzled to place for himself. Similar careless omissions prevail elsewhere, as at p. 601, where are enumerated under three heads the different viscera, viz., those

entirely invested, partially covered, and receiving no investment from the peritoneum. The pancreas and kidney are mentioned in neither of these classes. Again, at p. 307, we read, "the arteries are found in nearly every part of the animal body, with the exception of the hairs, nails and epidermis," no mention being made of the similar exemption, characterizing those more important structures, the cornea and cartilages. An equal negligence prevails with regard to the mention of common anomalies, which the text in certain places makes it apparent to have been Mr. Gray's intention to enumerate in detail. For instance, no allusion is made to the slip so often given off by the latissimus dorsi to the pectoralis major, practically important by its liability to complicate the operation for ligature of the axillary artery; to the third head of the biceps, the rectus sternalis, or the slip which frequently passes from the external oblique to the pectoralis major. So also of the arteries. The fact of the common absence of any trunk for the origin of those vessels usually given off by the subclavian, under the name of the thyroid axis, is not referred to, nor is there mention made of the irregularities of the renal arteries, in their number and mode of perforating the kidney; of the disappearance of one of the profunda branches of the brachial, or of the frequent origin of an "internal thoracic" branch from the internal mammary. We also notice that the almost constant presence of a second intercosto-humeral nerve, given off from the third intercostal, is not spoken of. Although we are told that the olecranon process sometimes remains ununited to the ulna, we do not learn the more frequent and perhaps equally important fact, that the acromion process does not always unite to the spine of the scapula, but remains separated from it by a sort of articulation liable to give rise to the idea of an ununited fracture.

But perhaps these are not the worst omissions. Facts which are only of occasional occurrence may be better omitted than those which are of constant existence, or details which are of importance in themselves, or in their bearing upon other facts. Of such omissions we would instance the following.

Information as to the source from which the iris is supplied by nerves, is sought for in vain, and nothing is said of the important relation of the vessels of the iris to the sinus circularis iridis. So is it with regard to the synovial membrane surrounding the flexor tendons at the wrist, and its connections with the sheaths of those tendons in the fingers, which, varying for each one, have such a relation to the prognosis of felon. The same may be said as to the tendon of the psoas parvus, absent when the iliac fascia is well developed and vice versa, with its relations to the crural ring, and the manner in which it protects the iliac vessels from compression, during the contractions of the psoas magnus. We have nothing about the "ligament of Retzius," or, under any other name, of the parts of the anterior annular ligament of the ankle-joint which

constitute it; of the fusiform dilatation of the internal carotid at its commencement, or of the curvature of the arteries, especially the iliac, in old persons and in negroes. All these facts are of importance, surgically, and might well have been made the subject of a paragraph of "surgical anatomy," infinitely more valuable than many which the author has introduced.

We have said, however, that the book under consideration was not only incomplete, but also open to the criticism of being deficient in the accuracy of its statements. In support of this opinion, we will refer to one or two instances.

Thus, at p. 2, we find it stated that the proportion between the organic and inorganic constituents of the bones varies at different periods of life. The statement is repeated at p. 304, in connection with the description of the fractures of the lower extremity. We are a little surprised at this, for we had long ago supposed it an established fact that bone had a fixed and settled composition, always the same, whether in infancy or old age. So far back as 1850, this opinion found its way into continental text-books, and we find it accepted by Mr. Humphry in his Treatise on the Skeleton. Stark, Owen Rees, Von Bibra, Nelaton, and Sappey, have each verified the experiments which have led to this result, and which is, as stated by Dr. Stark (*Ed. Med. and Surg. Journal*, April, 1845, p. 323), and founded on analyses of the bones of 232 different vertebrals, "that the amount of earthy matter in healthy bones is nearly uniform over the whole animal kingdom, and that neither the solidity or flexibility, the opacity or transparency of bones depends on an increased or diminished amount of the earthy matter in their composition." Von Bibra's experiments show the same proportion of earthy and organic matter in the fœtus of seven months, the man of thirty, and the woman of seventy, the latter being to the former as 67—33. It is to be borne in mind that *the bones* are not to be confounded with *bone*. The fragility of these in the aged is due to the rarefaction, resulting from progressive absorption going on at a more rapid rate than ossific deposition, whilst the increase of density does not counterbalance the diminution in weight and thinning of their walls.

At p. 639, we have a repetition of the usual mistake, so often commented upon by Dr. J. B. S. Jackson, about the ductus venosus, in the statement that "it joins the inferior vena cava;" and, in common with other errors, this is most prominently apparent in the illustrated plan of the fœtal circulation. It is also stated that the umbilical vein divides into two branches, viz., one to join with the portal vein, and one which continues onward under the name of the ductus venosus. Now every student knows that the umbilical vein breaks up into numerous branches, *three* of which are always well-marked; one of them goes to the left lobe, another to the right lobe, and this, larger than the preceding, is joined by

the vena portæ, whilst the third, smaller than either, is the ductus venosus and terminates in the *left hepatic vein*. We observe both these errors in the illustration, and also the additional one of the ductus arteriosus arising from the trunk of the pulmonary artery, instead of from its left subdivision, as correctly stated in the text.

At p. 76, we find the statement that ossification of the costal cartilages is in proportion to the age of the individual. This is not correct. Ossification is the result of disease rather than age, intemperance being one of its most frequent causes. As Mr. Humphry very correctly says, "the morbid condition which induces it in the adult may induce it also in the aged, though I have not remarked that it does so; and I suspect that those in whom it does occur do not often attain to a great age." The cartilages of Old Parr remained soft and were easily cut when he was examined after death by Harvey, and in a skeleton, in the Berlin Museum, of a person one hundred years old, the costal cartilages are unossified.

At p. 163, we read that "the movement of flexion (of the elbow-joint) is limited by the coronoid process, and that of extension by the olecranon process." Neither of these processes limits either of these motions, as the student must understand Mr. Gray to mean, by contact with the humerus at the bottom of their respective fossæ. Arrest of articular motion, by contact of the bones, never takes place. In the instance before us, the thin transparent septum between the fossæ would be liable to be broken through; the jar of the contact would be painful, and the effectiveness of the joint impaired for constant use by the disagreeable sensation which such an abrupt termination of movements would give rise to; therefore is it that the ligaments, and under no circumstances the processes, check, gradually and not abruptly, the limits of movement in the elbow, as well as every other joint of the body.

The following sentence occurs at p. 683. "Below the meatus urinarius is the orifice of the vagina, an elliptical aperture, more or less closed in the virgin by a membranous fold, the Hymen." A reference to the drawing of the vulva will show us what this statement means. We there have a very symmetrical orifice, beautifully "pinked," around its border, and elliptical in its antero-posterior diameter. Now the orifice of the vagina is an irregularly-shaped, transverse ellipse, and this we have repeatedly observed, and recently, independently of another, arriving at the same conclusion, had occasion to verify. It would be so theoretically, and it is so in point of fact; the walls of the vagina come together at the orifice as they do higher up, with this sole difference, that being a little contracted at this point, the apposition is not so apparent in women who have *not* borne children, unless they are strumpets, as in those who have; whilst in a few cases the whole orifice of the vagina may be so occluded by the large

flaps of the carunculæ which occasionally remain (as often, we imagine, as Mr. Gray's little scollops), that it cannot well be demonstrated without distorting its shape in the endeavor to press aside the carunculæ or folds of mucous membrane which obscure the outline of the ellipse.

At p. 27, we find a reiteration of the statement, originally made, we believe, by Mr. Hilton, of the non-existence of the frontal sinuses in children. We have seen specimens in which these were fully developed, obtained from young persons of ages varying from seven to fifteen. At p. 693, we are informed that the deep layer of the superficial fascia of the inguinal region is attached to the "deep layer of Poupart's ligament." How many layers has that ligament? At p. 671, we have the unfortunate third lobe of the prostate, which we had supposed was disposed of long ago, resuscitated by a very ready method, but with the saving clause, that its existence is not constant; and only present, Mr. Gray might have added, in cases of partial or general hypertrophy of the organ. The difficulty experienced in burying the third lobe of the prostate, would seem to require some one to write its epitaph, as Bartholinus did that of the liver when he wrote his "Exequiæ Hepatis" and "Responsio de difficili Hepatis Resurrectione," in defence of Pecquet's discovery of the receptaculum chyli, which exploded the theory of Aselli, who had taught that the lymphatics emptied into the liver.

(To be concluded next week.)

TUBERCULAR CONSUMPTION.

BY EDWARD JENNER COXE, M.D., OF NEW ORLEANS.

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* * * * * * MANY cases of practical interest are on hand, but I prefer to notice a subject that must by all be admitted to be most important. I allude to consumption of the lungs, and the more than possibility of effecting a greater number of cures in the advanced stages, than is generally conceded to be the case, by the persistent employment of remedies, to be specified, materially aided by appropriate dietetic and hygienic resources, perseveringly adhered to by the patient, with a will and energy proportioned to the magnitude of the existing evil. Of this important point, much is to be said, at another time. Circumstances of a personal nature compelled me, many years back, to devote particular attention to the treatment of consumption and chronic bronchitis, and my position for the last four years, as one of the visiting physicians to the Charity Hospital, where cases of consumption are always to be found, in connection with those in private practice, has afforded ample opportunities for the constant study and treatment of those diseases. It is not my purpose to indulge in vain

boasting, but, believing that benefit has been witnessed in all cases, and more cures effected than is generally claimed by our most reliable authorities, am I to be regarded as doing more than my profession requires by promulgating facts, for the benefit of suffering humanity? The universal prevalence of consumption, its known excessive fatality, the recognized difficulty of controlling or curing that disease, present sufficient reasons for noticing the subject.

It will doubtless be remembered that, some months back, I forwarded for your Journal the detailed treatment of an interesting and complicated case of consumption, which did not appear in the Journal. At the proper time, requesting the return of the manuscript, one of the editors, in reply, assigned two reasons for its non-appearance. One was, the too great length of the article, which might have been obviated by bringing it out in successive numbers; the other was, that the general course of treatment appeared calculated to produce injurious, rather than beneficial and curative effects. I regret my inability to give the precise words, the letter having been mislaid, but I am certain such was the real meaning. In a professional spirit, with a desire to do good, I will state a few facts defying contradiction, and possibly causing a modification of such an opinion. For some time before the occurrence of the case alluded to (March, 1858), to the present (June, 1859), not a day has passed, in which all of the remedies indicated have not been given, three or four times a day, to from four to eight patients, not only without in a single instance causing the least inconvenience of importance, occasionally nausea, but in every case more or less real benefit was apparent to all, and felt by the patients. The general result of the numerous trials made during a period of nearly three years, authorizes the assertion, that benefit was uniformly afforded, even in those cases beyond hope of a cure, but not of relief.

In not one case has any injury whatever resulted, while the number of cures has been greater than had been the case prior to the bringing into use the various remedies now, invariably entering into the formula, necessarily varied according to circumstances. I consider the fact of the utility of the different remedies as actually proved; to what extent it may be carried, time and further trials can alone determine. As one of the valuable adjuvants, I have seen too frequently the positive good resulting from the inhalation of many medicines, not to have been more strongly impressed in its favor than ever. Although it is used in almost every case, let me here state, that valuable as I know it to be, after more than thirty years experience with it, I hesitate not to assert that, *per se*, unassisted by every other adjunct, it will not, and from the very nature of the constitutional disease, it cannot, effect the cure of a single case of consumption, although it will cure many cases of pure uncomplicated chronic bronchitis. The

shameful apathy of the majority of the profession, as regards the employment of medical inhalation, has ever been a matter of astonishment.

While speaking thus favorably of the effects of positive medicinal treatment in the advanced stages of consumption, I should not pass over the marked influence which these remedies, in conjunction with the general course of treatment, undoubtedly possess in the first stage of the disease, or in cases of a strongly-marked predisposition thereto, from whatever cause proceeding, which, as far as my observation has extended, is by no means very difficult to decide about. I have no hesitation in alluding to this point with some positiveness, because, if consumption is ever to be successfully treated and a large number of cures with some facility effected, an appropriate course of treatment, medicinal, dietetic, and hygienic, must be instituted and vigorously pursued. I make the above remarks, because of the firm belief that by such means an arrest can not only be made of the tubercular deposition, but that it can frequently be removed. I doubt not you may consider me unreasonably enthusiastic, but as I have employed every means to enable me to entertain a belief in the power of our profession to control the ravages of this too prevalent disease, why should I hesitate to promulgate it? Certain it is, that I do not entertain the views of those prominent members of our profession, Drs. Bennett, Forbes and Bigelow, for I do place great confidence in *judicious medication*, proportioned to the nature of the disease, as well as to the age, sex and constitution of each individual.

Reports of Medical Societies.

EXTRACTS FROM THE RECORDS OF THE BOSTON SOCIETY FOR MEDICAL IMPROVEMENT. BY F. E. OLIVER, M.D., SECRETARY.

April 11th.—*Disease of the Upper Jaw-bone.* Dr. J. M. Warren reported the case.

"A gentleman, 64 years of age, applied to me in the Spring of 1857 for a disease of the upper jaw-bone, presenting the following characters and having the following history. Some months previously he began to feel a fulness in the left cheek; this was followed by a constant discharge of tears from the left eye, and apparent obstruction of the lachrymal duct. Very shortly a mucous discharge commenced from the nostril of that side, accompanied with a swelling in the neighborhood of the first and second molar teeth. The face soon after began to swell, and a globular tumor made its appearance on the cheek just below the orbit, apparently of a bony structure. An examination having at this time been made, a polypoid tumor was found in possession of the left nostril, which obstructed his breathing, and prevented the passage of air through that side At this stage of the affection, and while suffering a good deal from pain in his face, he applied to me.

"On passing a finger into the mouth, an elastic condition of the bone

at the alveolar processes and back part of the mouth was perceived, as if a tumor was making its way through at that point from the antrum. In front of this was situated the other tumor mentioned above, projecting from the face of the jaw-bone out toward the cheek; this also had the feel of very thin expanded bone. In the nostrils the polypoid tumor was very apparent, filling up the whole passage.

"I advised the patient to enter the Hospital, and, a consultation of the surgeons being held, it was decided as the opinion of those present, that the disease was probably of a malignant character, but that before proceeding to the removal of the whole bone an exploratory operation should be done, and the future steps be governed accordingly.

"The patient being etherized, a free incision was made through the mucous membrane of the mouth into the projecting tumor of the cheek. It proved to be a bony cyst, entirely filled with a glairy fluid, and had no connection with the cavity of the antrum. An incision was now made into the elastic projection on the alveolar processes, and a finger being introduced, penetrated at once freely into the cavity of the upper jaw-bone, which was found completely crowded with soft matter, having at first the appearance of colloid cancer. A finger of the other hand was now passed into the nostril, and forcing its way through the soft mass contained there, penetrated the cavity of the antrum at this point. The two fingers could now be made to meet within the cavity.

"I was at first disposed to proceed at once with the removal of the whole upper maxillary bone, but as there seemed to be some question as to the nature of the disease, I decided to clear the cavity of the bone of its contents, apply caustic potash freely to the interior, and await the issue. Much to my surprise, the operation was followed by very little local or constitutional disturbance. The patient did remarkably well, and in about a couple of weeks returned home apparently relieved.

"About three months after the operation, he applied to me with a slight return of the polypoid tumor of the nose. This was removed by breaking it down with the finger, and the caustic was again applied to the antrum. The cyst of the bone was completely obliterated by the first operation. This seemed to have been simply an inflammatory action, which had taken place between the two tables of the bone, caused by the inflammation in its neighborhood.

"This gentleman applied to me again in June, 1859, with a projecting tumor of his cheek, and a return of the polypus in his nose. He was also suffering with much nervousness from the continuance of the disease, and was very desirous that I should perform some radical operation for his cure. The tumor on the cheek was now quite hard, and not elastic, as on the previous operation. The opening into the antrum still remained fistulous, and there was no tumor at that point as before. A probe could be easily passed through the very small opening into the antrum. The lower floor of the orbit seemed to be a little elevated, and the lower eyelid everted. The palatine process of the superior maxillary bone appeared healthy, and there was no evidence of tumor in the posterior fauces. I unhesitatingly advised removal of the maxillary bone, and the operation was performed at the Hospital on June 8th, in the following manner.

"From the embarrassment caused in this operation by the blood

running down the throat and getting into the air-passages, notwithstanding the greatest precautions, it is desirable to do it as rapidly as possible, consistently with its thorough performance, unlike most operations in other parts of the body, in which, since the introduction of the use of ether, the surgeon may, for the most part, be as deliberate as he chooses. For this purpose I had a small table arranged in front of the patient, having all the necessary instruments on it, within my reach, and even the sponges, so as not to require the asking for anything to be handed. As large a dose of ether was administered to him as it was calculated would last through the first incisions, and then allow him sufficiently to recover to expectorate. The incisions were made, and the whole bone with the tumor exposed. The flaps being now separated, the sponge was again applied over the wound, and while the patient was being a second time etherized, a notch was made with a fine saw in the malar bone, near the suture where it joins the external orbitar process of the frontal bone. The sponge was now removed, and this and the other bones cut quickly through with Liston's large forceps, the usual incisions through the mucous membrane of the palate having been previously made. Although I had not attempted to do the operation quickly, a friend afterward informed me that it had taken exactly nine minutes in the performance.

"The forceps used in this operation, although large and somewhat clumsy in appearance, do their work better and with more comfort to the operator than any other instruments, so far as my experience goes, having tried them a number of times on the living, and very frequently on the dead subject. If in proper order, the incisions made by them in the bone are very clean, and without splintering. They are nineteen inches long, the blades being three inches, about the length required for spanning the alveolar processes and cutting through the hard palate.

"After the removal of the bone, a polypoid tumor, which hung by a long neck in the upper part of the nasal passage, was cut off by the scissors, and seemed to be distinct from the tumor in the antrum. The first rush of blood after removal of the tumor being staunched by sponges placed in the wound, the bleeding almost at once stopped, and only one or two small vessels in the flaps required to be tied. The edges of the wound were now brought together with six or seven sutures, which were tied in bow-knots, so that the wound might easily be opened by the house-surgeon if required by excessive hæmorrhage. The patient, on recovering from the ether, got up, and was disposed to walk off; as a matter of safety, he was taken down stairs in a chair by the attendants. The left eye, which was partially exposed by the drooping of the lid, was covered with a bit of black cloth, and the wound with a compress.

"Dr. Ellis made the following observations on the tumor.

"'Tumor was composed of white, soft substance, in which were numerous cavities containing transparent, gelatinous material. Examined by microscope, the white substance was found to be composed of nuclei containing well-marked nucleoli. In the midst of the nuclei were many clear spaces of the same size, or larger than the former. They suggested the idea that the cavities filled with the gelatinous material might have originated in this way. Considerable fibrous tissue was also seen.'

"I made a visit to the patient in the afternoon, and found him as

comfortable as could be expected. He passed a good night, and in the morning manifested some appetite; took gruel, broth, and a little brandy and water.

"On the third day he was so well, that I advised him to sit up in bed; the edges of the entire wound in the cheek having adhered together.

"On the fourth day all the sutures were removed, with the exception of the one next the mouth. He was able to be up and about his room.

"On the seventh day he was sufficiently well to go out of doors, and on the tenth day returned home."

MAY 9th.—*Pneumothorax.* Dr. PARKS was called to attend ———, at St. Vincent's Orphan Asylum, in Camden St., on the 10th of March, 1859.

The patient was a slender, delicate girl, 12 years of age. She was not of a tuberculous family; but had formerly undergone hard usage.

Five weeks previously, the patient had, in common with other children in the Asylum, an eruption of the skin supposed by her attendants to be measles. From that time forward, she had a cough. The day before Dr. P. first saw her, she had been seized with a pain in the chest.

He found her, on the 10th of March, in bed, suffering considerably with the pain in the right side of the thorax. The pulse was about 130. The lower half of the right lung was filled with moist crepitating *râles*. Over this region, percussion was dull, and the voice, of increased resonance. At one point, about half way between the apex and the base of the right lung, there was slight ægophony.

Leeching and Dover's powder were prescribed; and, on the following day, the pain was entirely gone, and did not return till April 12th. The subsequent treatment was mainly by Dover's powder, fusel oil, and generous diet; the fever being always of an asthenic type. The pulse was somewhat variable, from 126 upwards.

To return to the physical signs, the condition of the right lung, from the first visit—March 10th—till April 12th (at which latter date a new order of phenomena presented themselves), was as follows:—Crepitation extending at various times from the lower half, to the lower two-thirds of the organ. Dulness on percussion increased to flatness. The bronchial respiration became more intense. The left lung, at times, presented at different points, some crepitus, but never extensively, and sometimes none at all, so far as was detected. The patient was always ausculted sitting up in bed. The sputa were, for the most part, swallowed. Those which were seen were at no time colored.

April 12th, on visiting the patient, for the first time after the 7th, Dr. P. found an entire change in the physical signs. The patient had been seized, on this day, with pain in the right lateral region, and was suffering from it, at the time of the visit. The pulse was small, and very rapid. The respiration was hurried. The crepitation had almost entirely ceased to be heard over the right lung. In place of the previous flatness, there was *resonance* on percussion greater than on the other side. The respiration, at the lower portion of the lung, was amphoric. At the upper fourth of the lung, there was no amphoric, but on the contrary, comparatively vesicular respiration.

There was considerable moist crepitation at the lower portion of the left lung.

On the following day, April 13th, metallic tinkling was heard. The pain had been relieved, after a sinapism and fomentations.

April 14th, great bulging of the right side of the chest was observed.

At this date, Dr. J. B. S. Jackson was kind enough to see the patient, in consultation, and confirmed the existence of the physical signs latterly described; viz.—tympanitic percussion, amphoric respiration, metallic tinkling, and distension of the right side of the chest.

April 26th, no metallic tinkling had been heard for several days. The amphoric respiration had extended upward. The strength was failing. In other respects the state of things had not materially changed.

The patient gradually sank, suffering but little, and died on the night of the 29th of April.

Sectio-Cadaveris.—Dr. J. C. White was kind enough to remove the lungs, a complete autopsy not being feasible.

The subject was much emaciated. *Succussion* gave the sound of the splashing of fluid, with a strong amphoric resonance.

On puncturing the right side of the chest, before commencing the dissection, the flame of a lighted match was strongly blown. A pint, or a little more, of turbid serum was seen in the right pleural cavity.

The lungs were subsequently dissected by Dr. J. B. S. Jackson. There was a large mass of tubercular matter at the apex of the left lung, which organ also contained tubercles disseminated through its remaining portion.

The right lung was solidified through nearly its entire extent, and sunk in water. On passing a tube into the right bronchus, and blowing, while the lung was beneath the surface of water in a glass jar, bubbles of air were seen to emerge from the lung, and rising, were heard and seen to explode upon the surface of the water. This was when the lung and the fluid together about half filled the vessel. When the two together filled the jar, the explosive sounds were diminished. On lifting the organ so that the point of escape was above the liquid, the air emerged with a continuous hissing sound, whatever the height of the water.

The escape of air proved to be from two different points, one at an accidental incision (which Dr. White was aware of making, in removing the lungs) low down upon the organ; the other (where the perforation during life took place), in the very back part of the upper lobe, and about half way from the apex to the lower limit of that lobe.

On laying open this lung with the scalpel, its solidification was found to be owing to its being packed with tubercles throughout.

On cutting open the trachea, and dividing from above downward, and to the right, one of the bronchi was found cut off by a tubercular cavity of the size of a small chestnut, and lined with tubercular matter. This cavity opened upon the surface of the lung, at the point of perforation above described. Through the perforation, a probe was freely passed by Dr. Jackson, without meeting with any resistance whatever. A number of other points were observed, at different parts of the pulmonary surface, where perforations were, as it were, just ready to take place, similar to that which had occurred.

How the metallic tinkling was effected in this case, is a question raised by the situation of the perforation at the upper part of the

lung. It might, perhaps, be said that since by its great solidification, the lung was rendered comparatively incompressible, while its specific gravity was raised above that of water, the organ would sink in the fluid contained with it in the pleural cavity, as far as its attachments would allow, and would displace that fluid to such an extent as to raise the latter above the level of the perforation. But, such an hypothesis would seem to be negatived by the fact of the great tympanites, which existed contemporaneously with the metallic tinkling, and which extended far down toward the base of the lung. We are led, then, to seek another explanation.

Dr. Bigelow says, in his paper on pneumothorax, the most common cause of metallic tinkling is "the explosion of bubbles of air from beneath the surface of the liquid," in a "vibrating cavity." But, he also says, in the same paper, "a minor, or *sub-metallic* tinkling, having no musical resonance, may be produced by slight impulses given to the air in the cavity, such as the breaking of bubbles of mucus at orifices above the surface of the liquid."

Now, the suspicion occurs to me that "the breaking of bubbles of mucus" at the point of perforation, in this case, though above the level of the liquid in the pleural cavity, may have been the source of the true and marked metallic tinkling heard, that sound taking the place of the *sub-metallic* tinkling, which, from the preceding extract, we should have expected, and which, under ordinary circumstances, would probably have occurred. I am led to this suspicion by the consideration of the facts, that at times, in the course of our experiments, considerable force was requisite to expel, through the perforation, the air blown into the bronchus; and, that occasionally the stream of air would be checked entirely, to resume its course a minute after, perhaps, upon a renewed insufflation.* It would seem as if there were an occasional obstacle to the passage of air; as, for example, a minute detached mass of the tubercular lining of the cavity presenting at the orifice. This last supposition, however, is purely conjectural.

I infer, therefore, that during the life of the patient, the explosion of the bubbles would be forcible in proportion to the resistance overcome in producing them; and thus, instead of "slight," we should have *strong* "impulses given to the air in the cavity." The sound of the bursting of these bubbles would also, we conceive, derive full effect from the intense amphoric resonance observed in the case under consideration.

If this view be received, the case may perhaps be regarded as an exceptional one.

No other plausible explanation occurs to me, of the phenomena above described, unless it be considered such to assume that the small tubercular cavity behind the perforation contained sufficient fluid to supply the condition of the bubbles of air bursting from beneath the surface of a liquid.

Dr. Bigelow remarked that the results of several experiments, made some years since, would seem to show that all the sounds heard in pneumothorax can be produced after death, in pneumothoracic patients.

The production of these sounds requires a large cavity with indurat-

* This circumstance may possibly explain why the metallic tinkling was not heard for the few days preceding death.

ed walls, or tense walls, as when formed by the pleura, together with the presence of air and a liquid.

In the experiments alluded to, a tube being introduced into the cavity through the walls of the chest, in a patient dead from pneumothorax, a perfect metallic tinkling was produced by blowing through the tube, if its extremity was below the level of the fluid. If above, no tinkling was heard, but in its place, amphoric resonance. If any tenacious fluid obstructed the mouth of the tube while above the fluid, a submetallic tinkling was heard, less marked than when produced by the bursting of the bubble from beneath the surface of the liquid.

In the case reported by Dr. Parks, the orifice may have existed above the surface of the fluid, and have been obstructed by viscid secretion. Just in proportion to the firmness of the obstruction, would be the force of the sound; the obstruction yielding suddenly, and the rush of air causing the vibration of the walls of the cavity.

In 9 out of 10 cases, the metallic tinkling is produced by the entrance of air beneath the level of the fluid, but there are undoubtedly cases, as above stated, when it is due to the sudden bursting of air through an obstruction into the cavity above the fluid.

Dr. Jackson remarked that he had never heard a louder metallic tinkling than in this case; and from the great resonance on percussion which extended to the very base of the lung and which would seem to indicate the absence of all fluid in the pleural cavity, he thought there could be no doubt that the tinkling was produced at the opening of the pulmonary into the pleural cavity.

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HYGIENIC MATTERS.

The City Registrar of Providence, R. I., in his monthly report, states that that city is believed to be entirely free from smallpox, although an epidemic of variolous disease has existed there of late, there having been 21 cases of variola, and 52 of varioloid, between the first of January and the first of June. He says, "the disease commenced under circumstances extremely favorable to its extension, and was undoubtedly arrested by the general attention to vaccination. A more striking example of the value and effects of vaccination is seldom seen than that furnished by the history of smallpox in this city during the winter." In our remarks last week, on the prevalence of this disease in Boston at the present time, we expressed our doubts whether the most complete extension of vaccination that could be effected would secure us from the spread of varioloid, so long as the disease continued to be introduced into the city from without. Among the causes which tend to favor the spread of contagious disease, there is none more potent than the crowding of great numbers of human beings into a small space, and this state of things must always render us liable to occasional epidemics of varioloid, and other contagious diseases, although here also, as with vaccination, the remedy is, to some extent, in our own hands.

A writer in the *Courier*, of the 15th inst., makes some pertinent observations on this subject. Alluding to the deplorable hygienic condition of New York, he says—"In Boston we are as yet far distant from the condition there described, but the seeds of corruption are beginning to show themselves. The question I would ask, is this:—If a case should occur in Boston where 94 families were found living in one house, and a consequent mortality ensue greater than any known in London or Paris,—whether our city authorities have now the power to abate such a nuisance?" The question is one of serious moment. If we have no such power, it is high time it were obtained. Not only smallpox, but ship fever, and other contagious maladies, besides diseases, no less fatal because not capable of being communicated from one individual to another, flourish under such circumstances. If it is true, as we fear, that Boston is beginning to rival other cities in the crowded condition of the dwellings of the poorer classes, we must expect a corresponding increase in sickness and mortality. The extension of business into certain quarters formerly occupied by Irish laborers has done something towards destroying these foci of disease. Half-moon Place, one of the foulest nests of pestilence which ever existed in Boston, we are happy to say no longer exists, its area being now covered with warehouses. But many others still remain. A few summers ago, we counted sixty children playing in a small court leading out of Pearl street, all of whom probably lived in the few houses composing the court. On entering one of these houses, it seemed difficult to imagine how it could have contained any addition to the number of inhabitants already swarming within it. So long as this overcrowding of dwellings is allowed to exist, it is vain to expect that our city will be free from epidemic disease.

DR. DURKEE'S TREATISE AND A NEW YORK REVIEWER.

We must express our surprise at the appearance, in the New York *Journal of Medicine*, of an article professing to be a review of the recently published treatise on Gonorrhœa and Syphilis, by Dr. Durkee, of this city. The writer's private griefs, at a manifest eclipse of a certain translation of Ricord on the Venereal, edited by him, might have excused sharp criticism, but should not have betrayed into unfairness. To speak of a work which is filled, to an unusual degree, with distinctly announced opinions, the results of thirty years experience—with admirable and original descriptions of all matters relating to diagnosis—and with the clearest practical directions in regard to treatment, as "chiefly a compilation"—amounts to an interdiction of the use of the English language, every word of which has been again and again used by preceding writers.

A large portion of the review is devoted to fault-finding, because of Dr. Durkee's unwillingness to adopt every specious explanation of patients, and to admit the extreme frequency (though he by no means denies the possibility) of blennorrhagia derived from other sources than impure connection. "We think," says the reviewer, "it is time that every man who has the clap should not therefore be considered a liar, and we maintain that the statements of the majority of venereal patients who come under the care of any physician can be relied upon implicitly." *We* think, that when any physician has seen this class

of patients (even many of those among them who have no urgent motive for concealment and no delicate sense of shame), again and again compelled to abandon their subterfuges and *acknowledge* that they have lied, he learns to be somewhat incredulous in regard to specious tales, when they are contradicted by glaring facts, or are opposed to the results of almost universal experience. Are not the works of Ricord, and other commentators on syphilis, full of flippant recitals of the devices resorted to for removing the ingenious veil of mystery with which patients had vainly hoped to shroud their disease?

We protest against the attempts of some writers on syphilis to substitute the exception for the rule, and to defend the doctrine, inculcated by the reviewer in another place, "that a man rarely communicates gonorrhœa to a woman unless he has it himself" (*very* rarely), "while, strange as it may appear, most women who communicate gonorrhœa to men, do so without having it." We object to such far-fetched explanations as that gonorrhœa does not occur more frequently in married life because of an acquired acclimation between the parties. How is it that men *acclimated* with kept mistresses should be so often victims of this disease? How is it that in married life it should occur so very seldom when the parties are faithful to each other, but should be so readily communicated where one of them has become infected from a third person? We make these protests and objections without regard, for the moment, to the bearing of these questions upon public morality; but from a strong aversion we confess that we entertain to having the good sense of the members of the profession outraged by attempts to exhibit them as holding opinions, which would be considered, by many a shuffling patient, as only worthy to be laughed at as fit for "the marines." We are quite satisfied with the conclusions of Dr. Durkee, "that while the medical man admits that various innocent causes may induce gonorrhœal discharges, he may feel warranted in the opinion that the combined agency of all these causes is quite insignificant, compared with the agency attributable to the one chief cause. Where there is ground for reasonable doubt as to the cause of blennorrhagia, it is right that the suspected party should have the benefit of that doubt."

In the treatment of gonorrhœal ophthalmia, Dr. Durkee is represented as recommending venesection "in a manner not sanctioned by the best modern ophthalmic surgeons." It is true he cites two authorities as placing great reliance on depletion; but he expressly says, "bloodletting is not carried to anything like the extent which was once considered proper," and he goes on to state various reasons *against* heroic use of this means.

The youthful reviewer concludes his task by taking exception to the brevity of the descriptions of some of the symptoms of true syphilis; but we submit, that in a work of but 431 pages only a limited space can be devoted to details of the features exhibited by well-understood and undisputed phenomena.

To conclude, we must reiterate our formerly expressed judgment in favor of the work of our distinguished fellow townsman. In our opinion, Dr. Durkee's book is well adapted to the *practical wants* of physicians and students—is both graphic and lucid in style, and is creditable, alike to the long experience of the author and to the medical literature of his country, in which it fills so important a place.

SALIVARY CALCULUS.

A case of this somewhat rare affection has lately occurred in the person of the editor of the *Gospel Banner*, who devotes a considerable space, in the number of that paper for June 2d, to a description of his case. It appears that the patient had been subject to obstruction of the duct of the submaxillary gland from childhood, and, once before the present attack, a small calculus emerged from the duct, having been preceded by swelling and severe pain. At another time, an abscess formed in the gland. The last attack commenced with pain, swelling and fever, which soon became extreme, and continued for ten days, when a hard, calcareous substance was found, through an incision previously made. This was extracted by forceps, and proved to be a salivary calculus, an inch and an eighth long, and weighing ten grains. It appeared like a rough piece of yellowish-white coral. By way of apology for making his case public through the medium of the *Banner*, the editor says, "If the *Atlantic Monthly* can occupy pages with the 'Differential Calculus,' why should not we take a column to tell of our Salivary Calculus!"

Died under the Effects of Chloroform.—An inquest was held at Bellevue Hospital, by Coroner Gamble, on the body of a German woman, named Augusta Brady, who was admitted to the Hospital last Tuesday evening, suffering by burns sustained by her clothes taking fire while she was intoxicated. One of her shoulders was also dislocated. Drs. Goubley and Russell attended her, and deemed it advisable to give her chloroform during the operation for dislocation. The woman sank, however, before she had inhaled much of the anodyne, and died. The jury returned a verdict of "Death from secondary meningitis, probably hastened by the administration of chloroform during a surgical operation." They did not censure the physicians, however. Deceased was 28 years of age.—*N. Y. Times.*

Cancer Hospital.—The ceremony of laying the foundation-stone of the new Hospital for Cancer at Brompton, nearly opposite the Consumption Hospital, was performed on Monday afternoon by Miss Burdett Coutts, in the presence of a very numerous company, including the Bishop of London, the Ven. Archdeacon Sinclair, and several other clergymen and medical gentlemen. At Brompton, where a house has during the last six years been devoted to the reception of in-door patients, 803 afflicted persons have been received, and treated with all the advantages which a generous dietary, good nursing, and medical skill can give. The house, however, could not be made to afford that which is essential in all disease, and most especially to one so obnoxious as this—viz., pure air. A site for a new hospital has therefore been purchased by the trustees of the charity, with a view of ultimately accommodating 300 patients.—*London Lancet, June 4th.*

Medical Department of the Army.—The Army Medical Board, which recently convened in this city, have recommended the following gentlemen for appointment in the Medical Staff of the Army:—

No. 1. George Suckley, M.D., New York. No. 2. Dewitt C. Peters, M.D., New York. No. 3. Charles H. Alden, M.D., Pennsylvania.

Assistant Surgeons, Alexander B. Hasson and Jonathan Letherman,

were examined by the Board, and found qualified for promotion.—*N. Y. Monthly Review.*

Prof. E. R. Peaslee has been transferred to the Chair of Obstetrics and Diseases of Women in the New York Medical College, made vacant by the resignation of Dr. B. F. Barker; and Prof. Austin Flint, Jr., late of Buffalo, has been appointed to the Chair of Physiology and Microscopy. Dr. Flint holds the same chair in the Buffalo Medical College.—*Med. and Surg. Reporter.*

Dr. S. D. Gross, Professor of Surgery in the Jefferson Medical College, has been elected to the Surgical Department of the Howard Hospital, to fill the vacancy caused by the resignation of Dr. R. L. Madison. The duties of this position are divided between Dr. D. D. Clark and Dr. Gross.—*Ibid.*

Health of the City. The mortality of Boston for the last week was large compared with the corresponding period a year ago. Cholera infantum, casualties, scarlatina, smallpox, and "inflammation of the bowels" (peritonitis?) were the chief causes of the increased number of deaths. The number from these sources alone was 27, being just three times that of the corresponding week of the preceding year from the same diseases. Of these 27 deaths, it is fair to say that two-thirds might have been prevented. The victims to smallpox were all males; 2 were adults, aged 22 and 26 years, and three were children under 2 years of age.

Correction.—By the misprint of a word in the valuable paper of Dr. Beardsley, in the Journal of June 30th, a novel and ludicrous result is represented to have followed the use of stimulants in the treatment of diphtheria. In the last paragraph but one of that article, on p. 441, the word "hair" should have been printed *brain.* An apology is due Dr. B. for the delay in making this correction, its insertion having been by oversight twice omitted since the occurrence of the mistake.

A writer in the *London Lancet* alludes to amputation as a remedy in hydrophobia, and also to the administration of large quantities of ice in the treatment of that disease.—In a suit for damages in London, for the breaking of a patient's jaw by a dentist in the extraction of a tooth, the jury returned a verdict for the plaintiff—damages, £10.—Baron Henry Larrey, son of the well-known Larrey who was so highly esteemed by Napoleon I., is, at the present time, as was formerly his father, Director-General of the Army Medical Department in Italy.

Communications.—Application of Potassa Fusa to the internal surface of the Uterus.—Nitrate of Silver in Inflammations of the Throat.—Comminuted Fracture of the Upper Arm.—Saratoga Springs for Consumptives (carelessly retained in the Boston Post Office for ten days).

Deaths in Boston for the week ending Saturday noon, July 16th, 72. Males, 38—Females, 34.—Accidents, 2—inflammation of the bowels, 4—inflammation of the brain, 1—congestion of the brain, 1—cancer, 1—consumption, 16—convulsions, 4—cholera infantum, 7—cholera morbus, 1—croup, 2—dysentery, 1—dropsy, 3—dropsy in the head, 1—drowned, 3—puerperal diseases, 1—elephantiasis, 1—scarlet fever, 5—typhoid fever, 3—disease of the heart, 2—inflammation of the lungs, 1—congestion of the lungs, 1—rheumatism, 1—scrofula 1—smallpox, 5—strangulation, 1—teething, 1—tumor, 1—whooping cough, 1.

Under 5 years, 26—between 5 and 20 years, 9—between 20 and 40 years, 19—between 40 and 60 years, 12—above 60 years, 6. Born in the United States, 51—Ireland, 15—other places, 6.